RGP-0122

IN THE CLAIMS

1. (Currently amended) A circuit material comprising a layer of a dielectric liquid crystalline composite, the composite comprising

a liquid crystalline polymer;

a particulate filler composition, comprising a combination of a mineral filler and an organic filler; and

a fibrous web, wherein the composite has a dielectric constant of less than about 3.8 at frequencies higher than or equal to 1 GHz, a dissipation factor of less than or equal to about 0.007, and a UL-94 rating of V-1 or better.

2. (Currently amended) The circuit material of Claim 1, wherein the particulate filler comprises silica and ~~,~~ polytetrafluoroethylene~~, or a combination of silica and polytetrafluoroethylene~~.

3. (Original) The circuit material of Claim 1, wherein the particulate filler is treated with an coupling agent.

4. (Original) The circuit material of Claim 1, wherein the composite further has a water absorption of less than about 0.1%.

5. (Original) The circuit material of Claim 1, further comprising a first conductive layer disposed on one side of the composite layer.

6. (Original) The circuit material of claim 5, wherein the first conductive layer is copper.

7. (Original) The circuit material of claim 5, further comprising a second conductive layer disposed on a side of the composite layer opposite the first conductive layer.

8. (Original) The circuit material of claim 5, wherein the second conductive layer is copper.

RGP-0122

9. (Currently amended) A circuit, comprising

a dielectric substrate layer, wherein the dielectric substrate comprises

a liquid crystalline polymer,

a particulate filler composition comprising a combination of a mineral filler and an organic filler, and

a fibrous web; and

a circuit layer disposed on the dielectric substrate layer, wherein the circuit , the circuit has a dielectric constant of less than about 3.8, a dissipation factor of less than about ~~0.0007~~0.007 measured between 1 and 10 GHz, and a UL-94 rating of V-1 or better.

10. (Original) The circuit of claim 9, wherein the circuit layer is copper.

11. (Original) The circuit of claim 9, further comprising a conductive layer disposed on a side of the dielectric substrate opposite the first circuit layer.

12. (Original) The circuit of claim 11, wherein the conductive layer is copper.

13. (Original) The circuit of claim 8, wherein the conductive layer is patterned to form a second circuit layer.

14. (Currently amended) A multi-layer circuit comprising:

a first circuit, the first circuit comprising a first dielectric substrate layer and a first circuit layer;

a second circuit, the second circuit comprising a second dielectric substrate layer and a second circuit layer; and

a bond ply disposed between the first dielectric substrate layer and the second circuit layer; wherein at least one of the first dielectric substrate layer, the second dielectric substrate layer, or the bond ply comprises a liquid crystalline polymer, a particulate filler composition comprising a combination of a mineral filler and an organic filler, and a fibrous web; and further wherein the multi-layer circuit has a dielectric constant of less than about 3.8, a dissipation factor of less than or equal to about 0.007 measured between 1 and 10 GHz, and a UL-94 rating of V-1 or better.

15. (Original) The multi-layer circuit of claim 14, wherein the circuit layers are copper.

16. (Currently amended) The multi-layer circuit of claim 14, further comprising a resin coated conductive layer comprising a first conductive layer disposed on a flowable dielectric material, wherein the flowable dielectric material is disposed on a side of the first ~~conductivecircuit~~ layer opposite the first dielectric substrate layer.

17. (Withdrawn) A method for forming a dielectric liquid crystalline polymer composite, comprising:

contacting a first liquid crystalline polymer layer comprising a dielectric particulate filler with a fibrous web; and

passing the fibrous web and the first liquid crystalline polymer layer between at least two rollers, wherein a first roller is in physical contact with the fibrous web, and a second roller is in physical contact with the first liquid crystalline polymer layer, and further wherein at least one roller is maintained at a temperature within 10°C of the melting point of the first crystalline polymer.

RGP-0122

18. (Withdrawn) The method of Claim 17, wherein the first liquid crystalline polymer layer is formed by extrusion, casting, thermal spraying, or powder coating.

19. (Withdrawn) The method of Claim 17, wherein the fibrous web is pre-heated to a temperature of about 200°C to about 350°C.

20. (Withdrawn) The method of Claim 17, further comprising passing the composite through at least one set of additional rollers maintained at a temperature effective to provide the composite with increased X-Y dimensional stability.

21. (Withdrawn) The method of Claim 17, further comprising contacting the fibrous web with a second liquid crystalline polymer layer on a side opposite the first crystalline polymer layer, and passing the passing the fibrous web and the first and second liquid crystalline polymer layer between a second set of at least two rollers, wherein a first roller is in physical contact with the first liquid crystalline polymer layer, and a second roller is in physical contact with the second liquid crystalline polymer layer, and further wherein at least one roller of the second set of rollers is maintained at a temperature within 10°C of the melting point of the second crystalline polymer.

22. (Currently amended) A circuit material comprising

a conductive layer; and

a layer of a liquid crystalline composite disposed on the conductive layer, the composite comprising

a liquid crystalline polymer~~,~~; and

a particulate filler composition, wherein the particulate filler composition comprises an organic filler and a mineral filler~~is treated with a coupling agent~~; and

a fibrous web;

wherein the bond strength between the conductive layer and the liquid crystalline composite layer is greater than or equal to about 1 pli measured at 200°C.

RGP-0122

23. (Currently amended) The circuit materialcomposite of claim 22, wherein the mineral filler is treated with a coupling agent that is a silane that bonds to the mineral filler and to the liquid crystalline polymer.

2224. (Currently amended) A liquid crystalline composite, ~~having an improved z-axis coefficient of thermal expansion,~~ the composite comprising

a liquid crystalline polymer; and

a particulate filler composition, wherein the particulate filler composition comprises silica, polytetrafluoroethylene, ~~or~~ a combination of silica and polytetrafluoroethylene; and

a fibrous web,

wherein the bond strength between the conductive layer and the liquid crystalline composite layer is greater than or equal to about 1 pli measured at 200°C.